2 SEMI-ANNUAL MONITORING REPORT

In accordance with RLI Title V Permit Standard Conditions I.F and 19867, Part 32; BAAQMD Regulation 8-34-411; and 40 CFR §60.757(f) of the NSPS for landfills, this report is a Title V Combined Semi-Annual Report and Partial 8-34 Annual Report that is required to be submitted by RLI. This Report contains monitoring data for the operation of the gas collection and control system (GCCS). The operational records have been reviewed and summarized. The timeframe included in this Report is May 1, 2017 to October 31, 2017. The following table lists the rules and regulations that are required to be included in this Combined Report:

Table 2-1 Semi-Annual Report Requirements

RULE	REQUIREMENT	LOCATION IN REPORT
8-34-501.1, §60.757(f)(4)	All collection system downtime, including individual well shutdown times and the reason for the shutdown.	Section 2.1, Appendices B & D
8-34-501.2, §60.757(f)(3)	All emission control system downtime and the reason for the shutdown.	Section 2.2, Appendix B
8-34-501.3, 8-34-507, §60.757(f)(1)	Continuous temperature for all operating flares and any enclosed combustor subject to Section 8-34-507.	Section 2.3, Appendices E & F
8-34-501.4, 8-34-505, 8-34-510	Testing performed to satisfy any of the requirements of this rule.	Sections 2.4 & 2.10, Appendices G & I
8-34-501.5	Monthly landfill gas (LFG) flow rates and well concentration readings for facilities subject to 8-34-404.	Sections 2.5 & 2.11, Appendix K
8-34-501.6, 8-34-503, 8-34-506, §60.757(f)(5)	For operations subject to Section 8-34-503 and 8-34-506, records of all monitoring dates, leaks in excess of the limits in Section 8-34-301.2 or 8-34-303 that are discovered by the operator, including the location of the leak, leak concentration in parts per million by volume (ppm_v), date of discovery, the action taken to repair the leak, date of the repair, date of any required re-monitoring, and the re-monitored concentration in ppm_v.	Sections 2.6 & 2.7, Appendix H
8-34-501.7	Annual waste acceptance rate and current amount of waste in-place.	Section 2.8
8-34-501.8	Records of the nature, location, amount, and date of deposition of non-degradable wastes, for any landfill areas excluded from the collection system requirement as documented in the GCCS Design Plan.	Section 2.9
8-34-501.9, 8-34-505, §60.757(f)(1)	For operations subject to Section 8-34-505, records of all monitoring dates and any excesses of the limits stated in Section 8-34-305 that are discovered by the operator, including well identification number, the measured excess, the action taken to repair the excess, and the date of repair.	Section 2.10, Appendices I & J
8-34-501.10, 8-34-508, §60.757(f)(1)	Continuous gas flow rate records for any site subject to Section 8-34-508.	Section 2.11, Appendix K

RULE	REQUIREMENT	LOCATION IN REPORT
8-34-501.11, 8-34-509	For operations subject to Section 8-34-509, records or key emission control system operating parameters.	Section 2.2.2
8-34-501.12	The records required above shall be made available and retained for a period of five years.	Section 1.2
§60.757(f)(2)	Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under §60.756.	Section 2.2.1
§60.757(f)(6)	The date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a)(3), (b), (c)(4) of §60.755.	Section 2.12
§60.10 (d)(5)(i)	Start-up, Shutdown, Malfunction Events	Section 4, Appendices B, D, and E

2.1 Collection System Operation [BAAQMD 8-34-501.1& §60.757(f)(4)]

Appendix A contains a map of the GCCS at RLI. Section 2.1.1 includes all collection system downtimes. The information contained in Appendix B, A-51 and A-60 Flares SSM Logs and GCCS Downtime Summary, S-64 and S-65 Landfill Gas Engine SSM logs, and S-71 Gas Treatment System Downtime Log, includes the individual well shutdown times and the reason for each shutdown.

2.1.1 FLARE SYSTEM DOWNTIME

The A-51 Flare commenced operation in June 2005, and the A-60 Flare commenced operation on April 1, 2009. Table 2-2 summarizes the A-51 and A-60 Flares' downtimes for the reporting period.

Table 2-2 A-51 and A-60 Downtimes

Month	A-51 Downtime (Hours)	A-60 Downtime (Hours)
May 2017	574.37	8.17
June 2017	715.23	8.53
July 2017	723.20	25.03
August 2017	728.97	2.00
September 2017	714.20	0.70
October 2017	728.60	0.20
Total Hours:	**4,184.57**	**44.63**

During the period covered in this report, the GCCS was not shut down for more than five days on any one occasion. Appendix B contains the A-51 and A-60 Flare SSM logs, and GCCS Downtime Summary which lists dates, times, and lengths of shutdowns for the reporting period and year-to-date.

2.1.2 LANDFILL GAS ENGINE SYSTEM DOWNTIME

The S-64 and S-65 Landfill Gas Engines (with accompanying S-71 Landfill Gas Treatment System) commenced operation in April 27, 2017. Table 2-3 summarizes the S-64 and S-65 Engines' downtimes for the reporting period.

Table 2-3 S-64 and S-65 Downtimes

Month	S-64 Downtime (Hours)	S-65 Downtime (Hours)
May 2017	40.93	42.10
June 2017	178.00	25.17
July 2017	126.00	116.67
August 2017	9.50	44.83
September 2017	5.50	12.83
October 2017	5.83	172.25
Total Hours:	**365.77**	**413.85**

During the period covered in this report, the S-71 treatment system treated all landfill gasses going to the engines. Appendix B contains the S-64 and S-65 Engine SSM logs, and S-71 Downtime Log which lists dates, times, and lengths of shutdowns for the reporting period.

2.1.3 WELL DISCONNECTION LOG

A Wellfield SSM Log that lists dates, times, and lengths of disconnections for the reporting period is included in Appendix D. In addition, 4 wells (out of a possible 5) remains disconnected at the end of the reporting period, pursuant to BAAQMD Regulation 8-32-116.2 (Limited Exemption, Well Raising).

2.2 Emission Control Device Downtime [BAAQMD 8-34-501.2 & §60.757(f)(3)]

No bypassing of the control system or emissions of raw LFG occurred. The Flare SSM Logs that include all downtimes and reasons for each shutdown for the A-51 and A-60 Flares are contained in Appendix B. Device downtime is summarized in Table 2-3.

Table 2-3 GCCS Downtime Summary

January 1, 2017 through April 30, 2017 Total Downtime:	43.57
May 1, 2017 through October 31, 2017 Total Downtime:	16.83
Total 2017 Downtime:	60.40

2.2.1 LFG BYPASS OPERATIONS (§60.757(f)(2))

Title 40 CFR §60.757(f)(2) is not applicable at RLI because no bypass line is installed. LFG cannot be diverted around the control equipment.

2.2.2 KEY EMISSION CONTROL OPERATING PARAMETERS (BAAQMD 8-34-501.11 & 8-34-509)

The A-51 and A-60 Flares are subject to continuous temperature monitoring as required in BAAQMD Regulation 8-34-507 and 40 CFR §60.757(f)(1).

2.3 TEMPERATURE MONITORING RESULTS [(BAAQMD 8-34-501.3, 8-34-507, & §60.757(f)(1)]

The RLI has two flares used to destroy LFG collected by the GCCS (A-51 and A-60). Combustion zone temperatures of the flares are monitored with thermocouples and recorded with Yokogawa DX100 paperless chart recorders. There were no continuous recorder device SSM events during the reporting period. As shown in Appendix F, there were no periods of missing temperature data for the flares during the reporting period.

Title V Permit Condition Number 19867 Part 22 states that the minimum combustion zone temperature shall be equal to the average combustion zone temperature determined during the most recent complying source test minus 50°F, provided that the minimum combustion zone temperature is not less than 1,400°F. Pursuant to Part 22, the following temperature limits applied during the reporting period:

Table 2-4 Applicable Temperature Limits

Device	Test Date	Report Submitted	Average Temperature During Test (°F)	3-hr Minimum Temperature (°F)
A-51	2/8/2017	4/4/2017	1,439	1,400
A-60 Zone A	2/8/2017	4/4/2017	1,609	1,559
A-60 Zone B	2/19/2015	4/10/2015	1,538	1,488
A-60 Zone B	7/24/2017	9/25/2017	1,547	1,497

The three-hour minimum temperature applies upon submittal of the source test report. Operating records for the flares indicate all flares operated in compliance with the applicable three-hour average minimum temperatures from May 1, 2017 to October 31, 2017.

Pursuant to Title V Permit Condition Number 19867, Part 30g, the annual source test at A-60 may be conducted while A-60 is operating in either zone, provided that each operating zone is tested at least once every five years. The most recent source test for Zone A was completed in February 2017. Zone B was tested in July 2017, meeting the obligation to test each zone every five years.

2.4 MONTHLY COVER INTEGRITY MONITORING [BAAQMD 8-34-501.3, 8-34-507, & §60.757(f)(1)]

The Monthly Cover Integrity Monitoring Reports are included in Appendix G. The cover integrity monitoring was performed on the following dates:

- May 18, 2017
- June 21, 2017
- July 6, 2017
- August 23, 2017
- September 20, 2017
- October 1, 2017

No breaches of cover integrity (e.g., cover cracks or exposed garbage) were found during the reporting period.

2.5 LESS THAN CONTINUOUS OPERATION (BAAQMD 8-34-501.5)

The RLI does not operate under BAAQMD Regulation 8-34-404 (Less Than Continuous Operation) and therefore is not required to submit monthly LFG flow rates.

2.6 SURFACE EMISSIONS MONITORING [BAAQMD 8-34-501.6, 8-34-506, & §60.757(f)(5)]

Quarterly Surface Emissions Monitoring (SEM), pursuant to BAAQMD Regulation 8-34-506, was conducted during the reporting period. A flame ionization detector (FID) was used during the SEM events to monitor the path along the landfill surface according to the Landfill SEM Map. Any areas suspected of having emission problems by visible observations also were monitored. Immediately prior to both monitoring events, the FID was zeroed and calibrated using zero air and a 500-ppm$_v$ methane calibration gas.

The Second Quarter 2017 SEM event was conducted by Roberts Environmental Services (RES) personnel on May 24, 2017. Twenty exceedances were identified. Corrective action and re-monitoring are described below:

- 5-day corrective action was completed on May 29, 2017.
- 10-day re-monitoring was completed on June 1, 2017 with all locations cleared.
- 1-month remonitoring was completed on June 22, 2017. All locations cleared.

The Third Quarter 2017 SEM was conducted by RES on July 25, 2017. Twenty-nine exceedances were identified. Supplemental SEM was performed on August 18, 19, and 21, 2017 with Twenty-three exceedances identified. Corrective action and re-monitoring are described below:

- 5-day corrective action was completed on July 28, 2017

- First 10-day re-monitoring was completed on August 4, 2017. 20 locations were observed at less than 500 ppmv. 9 locations were still in exceedance of 500 ppmv.
- Additional corrective actions were completed and the second 10-day re-monitoring event was completed on August 10, 2017. All locations were cleared.
- 1-month remonitoring was completed August 18, 19, and 21, 2017. All locations cleared.

- 5-day corrective action for the Supplemental SEM was completed on August 18, 19, 21,23, and 25, 2017
- First 10-day re-monitoring for the Supplemental SEM was completed on August 18, 19, 21,23, and 25, 2017. All 23 locations were observed at less than 500 ppmv. All locations were cleared.
- 1-month remonitoring for the Supplemental SEM was completed September 11, 2017. All locations cleared.

SEM Reports are included in Appendix H.

2.7 COMPONENT LEAK TESTING [BAAQMD 8-34-501.6, 8-34-503)

Quarterly component leak testing, pursuant to BAAQMD Regulation 8-34-503, occurred during the reporting period on the following dates:

Second Quarter 2017 – May 24, 2017
Third Quarter 2017 – July 25, 2017

No exceedances were identified during either monitoring event. The Component Leak Testing results are included with the SEM reports in Appendix H.

2.8 SOLID WASTE PLACEMENT RECORDS (BAAQMD 8-34-501.7)

The solid waste placement total was calculated for the period of May 1, 2017 to October 31, 2017. The current waste in place figure includes solid waste placed in the landfill through the end of the reporting period. Table 2-5 summarizes the RLI solid waste placement records for the reporting period.

Table 2-5 Solid Waste Placement

Waste Placement (May 1, 2017 to October 31, 2017)	127,825 tons
Current Waste In Place as of November 1, 2017	13.62 million tons

2.9 NON-DEGRADABLE WASTE ACCEPTANCE RECORDS (BAAQMD 8-34-501.8)

RLI does not have non-degradable waste areas that are excluded from the collection system. Therefore, BAAQMD Regulation 8-34-501.8 is not applicable.

2.10 WELLHEAD MONITORING DATA (BAAQMD 8-34-501.4 & 8-34-505)

Wellhead monitoring was performed monthly pursuant to BAAQMD Regulation 8-34-505. The well data for May 1, 2017 to October 31, 2017 are included in Appendix I. Each well was monitored in accordance with the following requirements:

- 8-34-305.1 – Each wellhead shall operate under a vacuum.
- 8-34-305.2 – The LFG temperature in each wellhead shall be less than 55 degrees Celsius (131 °F).
- 8-34-305.4 – The oxygen concentration in each wellhead shall be less than 5 percent by volume.

The wellhead monitoring was performed on the following dates:

- May 4, 16, 17, 18, and 31, 2017
- June 1, 2, 20, 22, and 23, 2017
- July 4, 25, 26, and 28, 2017
- August 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, and 24, 2017
- September 1, 12, 13, 14, 25, and 28, 2017
- October 3, 4, 5, 6, and 30, 2017

WELLHEAD DEVIATIONS [BAAQMD 8-34-501.9 & §60.757(f)(1)]

A total of 11 deviations from the wellhead standards in 8-34-305 occurred during the reporting period. All exceedances were corrected prior to issuance of this report.

The Wellfield Deviation Log is included in Appendix J.

2.11 GAS FLOW MONITORING RESULTS [BAAQMD 8-34-501.10, 8-34-508 & §60.757(f)(1)]

The LFG flow rates from both the A-51 and A-60 flares are measured with Veris flow meters. The S-64 and S65 LFG engines are measured with ABB flow meters. The flow meters meet the requirements of BAAQMD Regulation 8-34-508 by recording fuel flow at least every 15 minutes.

Appendix K contains a summary of the daily and monthly LFG flow rates and heat input for the flares and engine plant. The A-51 flare is utilized as a backup for the A-60 flares. These flow rates are summarized in Table 2-6:

Table 2-6 Total LFG Flow

Emission Control Device	Total Runtime (hours)	Average Flow Rate (scfm)	Average Methane (%)[1]	Total LFG Flow (scf)	12-Month Total LFG Flow (scf) Corrected to 500 BTU/scf	Max Daily Flow (scf) Corrected to 500 BTU/scf
A-51	231	1,349	53.6	18,727,186	410,523,792	1,873,225
A-60	4,371	1,759	53.3	461,388,541	763,411,550	3,453,205
S-64	4,050	557	46.9	135,237,355	135,733,974	988,200
S-65	4,002	522	46.8	125,243,213	126,299,580	1,024,084
Total	4,399	2,806	51.1	740,596,295	1,435,968,896	--

[1]Methane content was determined from the February 18, 2016, February 8, 2017, and July 24 to 26, 2017 Source Tests. Heating value of methane used in heat input calculations is 1,013 BTU/scf
scfm = standard cubic feet per minute
scf= standard cubic feet
MMBTU = million British thermal units

Pursuant to Title V Condition Number 19867, Part 20, the total LFG throughput to the either flare did not exceed 4,320,000 scf during any one day. The A-51 and A-60 Flares combined total LFG throughput did not exceed 2,207,520,000 scf during any consecutive 12-month period.

Appendix K contains a summary of the combined daily LFG flow rates for the A-51 and A-60 Flares and the consecutive 12-month summaries.

There were no periods of missing data or chart recorder non-operation for the A-51 or A-60 Flares or the landfill gas engine plant (S-64 and S-65 engines) during the reporting period. The Flare Missing Data Report Forms are included in Appendix F.

2.12 COMPLIANCE WITH §60.757(f)(6)

"The date of installation and the location of each well or collection system expansion added pursuant to (a)(3), (b), (c)(4) of §60.755."

Routine GCCS maintenance occurred during the reporting period. The Wellfield SSM Log is included in Appendix D, Wellfield SSM Log.

26 wells were added to and 12 wells were removed to the collection system during the reporting period (May 1, 2017 to October 31, 2017).

As of the end of this reporting period, 105 total collectors (96 vertical wells and 9 horizontal collectors) were in service at RLI. A map of the LFG collection system showing the positioning of all vertical wells, horizontal collectors, and other LFG extraction devices is included in Appendix A.

2.13 COMPLIANCE WITH TITLE V PERMIT CONDITION 13123 (S-34 & S-39)

The S-34 Compost Facility Operations and S-39 Screening Operations were utilized during the reporting period. The total amount of material processed did not exceed 160,368 tons during any consecutive 12-month period during the reporting period of May 1, 2017 to October 31, 2017. Monthly and 12-month rolling throughputs are summarized in Table 2-7.

Table 2-7 Composting and Screening Operations Throughput

Month	Total Throughput (tons)	Rolling 12-Month Throughput (tons)
May 2017	13,289	134,746
June 2017	12,459	137,225
July 2017	11,635	139,519
August 2017	12,802	142,010
September 2017	11,565	143,574
October 2017	11,601	144,261

Pursuant to Title V Permit Condition Number 13123 Part 7, all yard waste material was processed within 72 hours of receipt. In addition, pursuant to Title V Permit Condition Number 13123 Part 8, the plant received no public nuisance notices of violation during the reporting period of May 1, 2017 to October 31, 2017.

2.14 COMPLIANCE WITH TITLE V PERMIT CONDITIONS 14098 AND 16516 (S-55)

Pursuant to Title V Permit Condition Number 14098, the annual gasoline throughput for the S-55 Non-Retail Gasoline Dispensing Facility Number 8573 did not exceed 940,000 gallons in any consecutive 12-month period during the timeframe of this report. Monthly gasoline throughput totals for the reporting period are listed in Table 2-8:

Table 2-8 Unleaded Gasoline Throughput

Month	Total Throughput (gallons)	Rolling 12-Month Fuel Usage (gallons)
May 2017	179	2,637
June 2017	139	2,619
July 2017	128	2,576
August 2017	129	2,387
September 2017	224	2,247
October 2017	217	1,995

Pursuant to Title V Permit Condition Number 16516, the Static Pressure Performance Test (Leak Test) for S-55 was performed on April 11, 2017. The Static Pressure Performance Test results are included in Appendix O.

2.15 COMPLIANCE WITH TITLE V PERMIT CONDITIONS 22820 (S-49)

The permit for S-49 was surrendered to BAAQMD on November 4, 2013. The equipment is on longer on site.

2.16 COMPLIANCE WITH TITLE V PERMIT CONDITION 19865 (S-41)

Pursuant to Title V Permit Condition 19865, the total of waste processed at the S-41 Yard and Green Waste Shredding Operation did not exceed 820 tons per day or 200,000 tons per year. Table 2-9 summarizes the amount of waste processed at S-41 during the reporting period:

Table 2-9 Waste Processed at S-41

Month	Total Throughput (tons)	Rolling 12-Month Throughput (tons)
May 2017	13,289	134,746
June 2017	12,459	137,225
July 2017	11,635	139,519
August 2017	12,802	142,010
September 2017	11,565	143,574
October 2017	11,601	144,261

2.17 COMPLIANCE WITH TITLE V PERMIT CONDITION 19866 (S-42)

The total amount of material received at the S-42 Soil and Cover Stockpiles did not exceed 1,160 tons per day and 105,500 tons per year.

2.18 COMPLIANCE WITH TITLE V PERMIT CONDITION 19867, PARTS 6-10

The following is a summary of vehicle activity at the RLI:

- The mean vehicle fleet weight for all off-site vehicles traveling on paved roads was 15.03 tons, which is below the permit limit of 15.31 tons.
- Mean vehicle fleet weight for all off-site vehicles traveling on gravel or dirt roads was 16.62 tons, which is below the permit limit of 16.63 tons.
- The mean vehicle fleet weight for all on-site landfilling and construction related vehicles was 9.9 tons, which is below the permit limit of 28.37 tons.
- During the reporting period, the vehicle miles travelled (VMT) per day on gravel roads did not exceed the permit limit of 280 VMT per day. 2017 partial calendar year VMT on gravel roads was 37,517 VMT, below the limit of 87,080 VMT.
- During the reporting period, the VMT per day on dirt roads did not exceed the permit limit of 639 VMT per day. 2017 partial calendar year VMT on dirt roads was 100,046 VMT, below the limit of 198,650 VMT.

- During the reporting period, the VMT per day on paved roads did not exceed the permit limit of 622 VMT per day. 2017 partial calendar year VMT on paved roads was 62,529 VMT, below the limit of 205,880 VMT.
- During the reporting period, the VMT per day on paved roads for the on-site vehicle fleet did not exceed the permit limit of 61 VMT per day. 2017 partial calendar year VMT on paved roads is 10,889 VMT, below the limit of 19,080 VMT.

The records for VMT and average vehicle fleet weights are available for review at RLI.

2.19 COMPLIANCE WITH TITLE V PERMIT CONDITION 19867, PARTS 14 AND 15

No contaminated soil containing volatile organic compound (VOC) concentrations greater than 50 parts per million (ppm) was received during this reporting period. The total VOC emission rate for the reporting period (May 1, 2017 to October 31, 2017) is 0.00 lbs. The VOC soil log is included in Appendix L.

2.20 COMPLIANCE WITH TITLE V PERMIT CONDITION 19867, PARTS 31 AND 33

WEEKLY H_2S MONITORING

Pursuant to Title V Permit Condition Number 19867, Part 31b, weekly hydrogen sulfide (H_2S) readings were taken using Draeger tubes. This sampling frequency was increased to twice weekly starting November 22, 2016 per the Compliance Agreement between RLI and BAAQMD. This agreement is in effect and all terms of the agreement have been complied with.

The twice weekly H_2S readings and quarterly averages are summarized in Appendix M, H_2S Twice Weekly and Quarterly Monitoring.

QUARTERLY H_2S CHARACTERIZATION

Pursuant to Title V Permit Condition Number 19867, Part 31a, RLI collected the quarterly characterization of the LFG for analysis of sulfur compounds. The results are included in Tables 2-10 (LFG), 2-11 (Engine Inlet before pre-treatment), and Appendix M. As previously discussed, RLI has obtained a Compliance Agreement with BAAQMD covering the concentration limits of H_2S in the landfill gas. This agreement is in effect and all terms of the agreement have been complied with. The Third Quarter 2017 LFG characterization monitoring was collected on September 18, 2017 and sent out for analysis to Atmospheric Analysis & Consulting (AAC). Resampling of the LFG was collected on September 29, 2017 and analyzed by ALS Environmental (ALS) to compare with the ACC results. The ALS resampling (taken 11 days after the ACC sampling) is about 55% of the ACC results.

Table 2-10 LFG Characterization Results

Compound	Second Quarter 2017 Result (ppm_v)	Third Quarter 2017 Result (ppm_v) (AAC)	Third Quarter 2017 Result (ppm_v) (ALS)	Permit Limits (ppm_v)
Hydrogen Sulfide	508	2,385	1,300	N/A
Carbonyl Sulfide	ND	ND	ND	N/A
Methyl Mercaptan	0.486	1.10	1.60	N/A
Ethyl Mercaptan	0.186	0.287	ND	N/A
Dimethyl Sulfide	0.172	0.315	ND	N/A
Carbon Disulfide	0.175	0.325	ND	N/A
Total Reduced Sulfur	**512**	**2,397**	**1,313**	**450**

ND = not detected
N/A = not applicable

Table 2-11 Engine Inlet (pre-treatment) Characterization Results

Compound	Second Quarter 2017 Result (ppm_v)	Third Quarter 2017 Result (ppm_v) (AAC)	Third Quarter 2017 Result (ppm_v) (ALS)	Permit Limits (ppm_v)
Hydrogen Sulfide	156	597	330	N/A
Carbonyl Sulfide	ND	ND	0.790	N/A
Methyl Mercaptan	0.344	0.506	0.640	N/A
Ethyl Mercaptan	0.129	0.197	0.150	N/A
Dimethyl Sulfide	0.074	0.172	0.240	N/A
Carbon Disulfide	ND	0.087	0.150	N/A
Total Reduced Sulfur	159	603	334	**450**

ND = not detected
N/A = not applicable

ROLLING 4-QUARTER TRS LIMIT

The rolling 4-quarter average TRS concentration was calculated at the end of each quarter using data collected from twice weekly tube samples and quarterly analytical samples per Condition 19867, Part 31b. Results are shown in Table 2-12. As shown in the table, at the end of all the Quarters, the calculated TRS concentration was in excess of the 350 ppm_v limit. The Compliance Agreement also covers this limit. Follow-up actions are discussed later in this section.

Table 2-12 Rolling 4-Quarter TRS Concentration

Quarter	Calculated TRS (ppmv)	Rolling Quarterly Average Annual TRS (ppmv)
2016 Q4	381.2	383.8
2017 Q1	570.1	438.8
2017 Q2	403.3	425.1
2017 Q3	1,101.3	614.0

ANNUAL LFG CHARACTERIZATION

LFG characterization sampling was conducted concurrently with the A-60 annual source test as required by Title V Permit Condition Number 19867, Part 31 on February 8, 2017. The LFG sample was collected from the main LFG header and analyzed for the organic and sulfur compounds listed in Part 31. The results were included in the Annual Source Test report (A-60 Zone A) submitted on April 4, 2017. On July 24 and 25, 2017, the source testing of the engine plant included the source testing of A-60 Zone B. The results were included in the Source Test report (A-60 Zone B) submitted on September 25, 2017.

Results for Toxic Air Contaminants (TACs) are presented in Table 2-13 and indicate that the LFG collected by S-5 did not exceed the limits listed in Title V Permit Condition 19867, Part 18.b.

Table 2-13 Annual LFG Characterization: Toxic Air Contaminants

Compound	Result (2/8/17) (ppb_v)	Result (7/24/17) (ppb_v)	Concentration Limit* (ppb_v)
Acrylonitrile	<SRL	<SRL	300
Benzene	553	464	1,500
Benzyl Chloride	<SRL	<SRL	500
Carbon Tetrachloride	<SRL	<SRL	200
Chlorobenzene	87	<SRL	200
Chloroethane	141	127	500
Chloroform	<SRL	<SRL	200
1,4-Dichlorobenzene	297	240	1,000
Ethylbenzene	2620	2550	4,000
Ethylene Dibromide	<SRL	<SRL	200
Ethylene Dichloride	219	107	200
Ethylidene Dichloride	<SRL	<SRL	500
Hexane	553	504	2,000
Isopropyl Alcohol	2290	2780	10,000
Methyl Alcohol	2390	2930	300,000
Methyl Ethyl Ketone	5180	4260	15,000
Methylene Chloride	<SRL	<SRL	1,000
Methyl tert-Butyl Ether	<SRL	<SRL	500
Perchloroethylene	103	81	1,000
Styrene	170	145	500
1,1,2,2-Tetrachloroethane	<SRL	<SRL	200
Toluene	4610	4580	20,000
1,1,1-Trichloroethane	<SRL	<SRL	200
Trichloroethylene	85	<SRL	500
Vinyl Chloride	163	147	2,000
Vinylidene Chloride	<SRL	<SRL	500
Xylenes	5270	4990	20,000

ppb_v = parts per billion by volume
<SRL = less than the sample reporting limit

Per the Compliance Agreement, quarterly samples were collected and analyzed for ethylbenzene and 1,4-Dichlorobenzene. A sample was collected on September 18, 2017 at the Flare and the Engine Inlet (pre-treatment) and analyzed by Atmospheric Analysis & Consulting (AAC). Resampling of the LFG was collected on September 29, 2017 and analyzed by ALS Environmental (ALS). Results are presented below.

Table 2-14 Toxic Air Contaminants Sampling

Species	2nd Quarter 2017 Flare Result (ppb_v)	3rd Quarter 2017 Flare Result (ppb_v)	3rd Quarter 2017 Engine Inlet Result (ppb_v)	Limit (ppb_v)
Ethylbenzene (AAC)	880	212	498	4,000
Ethylbenzene (ALS)	---	1600	1000	4,000
1,4-Dichlorobenzene (AAC)	ND	ND	ND	1,000
1,4-Dichlorobenzene (ALS)	---	120	36	1,000

ND = not detected

GROUND LEVEL H2S MONITORING

RLI began conducting fenceline monitoring for ground level H_2S concentrations in accordance with the May 2011 Proposed Hydrogen Sulfide Monitoring Plan in November 2016. Monitoring was conducted on the following days:

- May 18, 2017
- June 30, 2017
- July 20, 2017
- August 30, 2017
- September 21, 2017
- October 10, 2017

There were no H_2S concentrations observed above 30 ppb averaged over 60 minutes or 60 ppb averaged over 3 minutes.

2.21 COMPLIANCE WITH TITLE V PERMIT CONDITION 22940 (S-56)

Conditions from the California Air Resources Board (CARB) Permit Number 117378 for the S-56 Portable Horizontal Grinder have been incorporated by reference into the RLI Title V Permit. Therefore, the compliance records for this equipment have been included in this Combined Report. Pursuant to BAAQMD Condition Number 22940, the emissions of particulate matter less than 10 microns in diameter (PM_{10}) did not exceed 10 tons per year. The maximum daily throughput for the portable horizontal grinder (S-

56) did not exceed 820 tons per day or 200,000 tons per year. Monitoring is performed daily when operations are conducted, the recording of total throughput of all registered equipment units operating. Table 2-15 lists the PM_{10} emissions and total throughput of waste processed at S-56 for the reporting period:

Table 2-15 Waste Processed at S-56

Month	PM_{10} Emissions (tons)	Estimated Total Throughput (tons)
May 2017	0.01	275
June 2017	0.00	0
July 2017	0.01	220
August 2017	0.01	110
September 2017	0.04	715
October 2017	0.00	0

2.22 COMPLIANCE WITH TITLE V PERMIT CONDITION 22941 (S-57)

Conditions from the California Air Resources Board (CARB) Permit Number 117376 for the S-57 Portable Diesel Engine have been incorporated by reference into the RLI Title V Permit. Therefore, the compliance records for this equipment have been included in this Combined Report. Pursuant to BAAQMD Condition Number 22941, the diesel fuel usage has not exceeded 72,295 gallons during any consecutive 12-month period. The Daily fuel and operating records are maintained and summarized on a monthly basis. Table 2-16 lists the monthly and rolling 12-month fuel usage for the S-57 Portable Diesel Engine for the reporting period:

Table 2-16 Fuel Usage at S-57

Month	Diesel Fuel Usage (gallons)	Rolling 12-Month Fuel Usage (gallons)
May 2017	63	3,107
June 2017	0	2,107
July 2017	120	1,094
August 2017	0	573
September 2017	208	781
October 2017	0	465

2.23 COMPLIANCE WITH TITLE V PERMIT CONDITION 23052 (S-58)

Pursuant to Permit Condition 23052 Part 1, the total leachate influent rate to the Aerated Leachate Pond (S-58), excluding non-contact storm runoff, did not exceed 39.42 million gallons during any consecutive 12-month period. Table 2-17 displays the leachate flow information for S-58.

Table 2-17 Leachate Flow Information for S-58

Month	Total Leachate Influent Rate to S-58 (gallons)	Total Rolling 12-Month Flow Rate to S-58 (millions of gallons)
May 2017	1,248,900	20,069,280
June 2017	1,165,640	20,366,120
July 2017	441,640	19,779,680
August 2017	477,840	19,533,520
September 2017	166,520	18,881,920
October 2017	792,780	19,037,580

As shown in Table 2-18, the average concentration of precursor organic compounds (POCs) in the leachate influent to S-58 did not exceed the limits specified by Title V Permit Condition Number 23052 Parts 2 and 3:

Table 2-18 POC Concentrations for S-58

Sample Date	Benzene (ppb)	1,4-Dichlorobenzene (ppb)	Vinyl Chloride (ppb)	Total POC Concentration (ppb)
June 26, 2017	4.0	5.1	ND<0.5	35.25
Limit	19	48	7	500

2.24 COMPLIANCE WITH TITLE V PERMIT CONDITION 24527 (S-61 AND S-62)

The S-61 Portable Diesel Engine for Waste Tipper and S-62 Portable Diesel Engine for Power Screens operated less than 4,992 hours combined during any 12-month period ending in the May 1, 2017 to October 31, 2017 reporting period. Table 2-19 displays runtime hours for S-61 and S-62 during the reporting period.

Table 2-19 S-61 and S-62 Portable Diesel Engines

Month	S-61 Total Runtime (Hours)	S-62 Total Runtime (Hours)	Combined Rolling 12-Month Total (Hours)
May 2017	22	0	296
June 2017	21	0	298
July 2017	28	0	304
August 2017	32	0	313
September 2017	26	0	300
October 2017	36	0	299

2.25 COMPLIANCE WITH TITLE V PERMIT CONDITION 25634

Permit Condition 25634 requires the calculation of monthly LFG Input to all LFG-Fired Combustion Equipment and calculation of monthly emissions of CO and SO2. The calculations are summarized on a quarterly basis to show compliance with rolling 4-

quarter limits. These calculations are summarized below. Complete calculations are presented in Appendix P.

Table 2-20 Rolling 4-Quarter LFG Input and CO and SO_2 Emissions

Year	Quarter	Rolling 4-Quarter Totals		
		LFG Input (MMscf)	CO Emissions (tons)	SO_2 Emissions (tons)
2016	4	1,181	10.24	40.60
2017	1	1,203	10.21	47.47
2017	2	1,251	11.56	44.83
2017	3	1,340	13.66	57.46
Limits		2,625	237.5	99

4 START-UP, SHUTDOWN, MALFUNCTION REPORT

Start-up, Shutdown, Malfunction (SSM) Report for the Collection and Control Systems at the Redwood Landfill

The NESHAP contained in 40 CFR Part 63, AAAA for MSW landfills to control hazardous air pollutants include the regulatory requirements for submittal of a semi-annual report (under 40 CFR §63.10(d)(5) of the general provisions) if an SSM event occurred during the reporting period. The reports required by 40 CFR §63.1980(a) of the NESHAP and §60.757(f) of the NSPS summarize the GCCS exceedances. These two semi-annual reports contain similar information and have been combined as allowed by 40 CFR §63.10(d)(5)(i) of the General Provisions.

NESHAP 40 CFR Part 63, AAAA became effective on January 16, 2004. SSM events that occurred during the semi-annual reporting period (May 1, 2017 to October 31, 2017) are noted in this section and included in Appendix B. The following information is included as required:

- During the reporting period, 20 A-51 Flare SSM events, 43 A-60 Flare Zone A SSM events, and 51 A-60 Flare Zone B SSM events occurred. The time, duration, and cause of each event are included in Appendix B, Flare and Engine SSM Logs.

- During the reporting period, 36 S-64 Engine (#1) SSM events, 72 S-65 Engine (#2) SSM events occurred. The time, duration, and cause of each event are included in Appendix B, Flare and Engine SSM Logs

- During the reporting period, 45 wellfield SSM events occurred. The time and duration of these events are included in Appendix D, Wellfield SSM Log.

- During the reporting period, 0 monitoring/recorder equipment SSM event occurred.

- In all 267 flare, engine, and wellfield SSM events, automatic systems and operator actions were consistent with the standard operating procedures contained in the SSM Plan.

- Revisions of the SSM Plan to correct deficiencies in the landfill operations or procedures were neither required nor prepared (§63.6(e)(3)(viii)).

I certify the following:

Based on information and belief formed after reasonable inquiry, information on the startup, shutdown, malfunction forms, all accompanying reports, and other required certifications are true, accurate, and complete.

Ramin A. Khany

Signature of Responsible Official

November 29, 2017
Date

Ramin Khany
Name of Responsible Official